Licensing information

For information on licensing INEEL technologies such as those developed by Dr. Sisson, contact Technology Outreach Account Executive:

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Dr. 'Buck' Sisson

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Dr. 'Buck' Sisson

Education: Dr. James B. "Buck" Sisson received his Ph.D. in agronomy, from the New Mexico State University, Las Cruces, New Mexico, in 1980; and his M.S. and B.S. from Montana State University, Bozeman, Mont., in agronomy and agriculture business, respectively.

Work experience: Prior to his INEEL experience, Dr. Sisson served on the graduate faculty at Kansas State University, Manhattan, Kansas, where he taught water movement and chemical transport in soil systems as well as advanced soil physics and mechanics of erosion. Prior to serving at K-State, he was employed on the Hanford Reservation as a vadose zone hydrologist researching radionuclide transport associated with tank leaks and crib discharges. Previously, Buck and Kay (his wife) served in Peace Corps in Iran as soil scientists.

Professional endeavors: Dr. Sisson's specialty has been the invention of water potential, water content and hydraulic-property measurement instrumentation for quantifying mass transfer of water and solutes at great depths below land surface. He also designs field experiments to characterize sites for contaminant transport and water movement potential in conjunction with modeling studies; initiates thermal infrared studies to estimate the vertical connectivity of fracture apertures; and supports commercial transfer of intellectual property to outside firms and serves as product champion for vadose zone instruments developed at the INEEL for applications throughout the DOE Laboratory system.

"Looking back over the 14 years of service to the Lab, the things that stand out most vividly in my mind have to do with unleashing creativity on specific problems," Sisson recalls. "Creativity in many forms, not just the tensiometer in it's many configurations, but to have all the resources of the Lab, the Model Shop in the IRC being most important, applied to a problem was a splendid thing to behold. Having experienced the creative flow from my close associates at the Lab will forever remain in my mind."

Patents:

U.S. Patent No. 5520248 – Method and Apparatus for Determining the Hydraulic Conductivity of Earthen Material (Borehole permeameter)

U.S. Patent No. 5644947 -- Tensiometer and Method of Determining Soil Moisture Potential in Below-grade Earthen Soil (Portable tensiometer)

U.S. Patent No. 5758538 – Tensiometer and Method of Determining Soil Moisture Potential in Below-grade Earthen Soil (Deep tensiometer -- single valve)

U.S. Patent No. 5915476 -- Monitoring Well (Advanced tensiometer)

U.S. Patent No. 5969242 – Isobaric Groundwater Well

U.S. Patent No. 6263726 – Sidewall Tensiometer and Method of Determining Soil Moisture in Below-grade Earthen Soil (Sidewall tensiometer)

U.S. Patent No. 6289725 – Field Matric Potential Sensor (Laboratory tensiometer)

U.S. Patent No. 6308563 – Vadose Zone Isobaric Well (Isobaric tensiometer)

U.S. Patent No. 6,405,588 -- Monitoring Well (Self-filling tensiometer)

U.S. Patent No. 6539780 -- Self-compensating Tensiometer and Method (Self-compensating tensiometer)

U.S. Patent No. 6609434 -- A Method of Retrieving a Liquid Sample, a Suction Lysimeter, a Portable Suction Lysimeter, a Lysimeter System and a Deep Lysimeter (Suction bailer)